

Appln No. 10/712,364

Amdt date June 3, 2005

Reply to Office action of March 22, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A substrate machining method for machining a substrate, comprising: ~~the step of~~

cutting the substrate through a first ~~from its one~~ surface by use of a rotating ~~as a~~ disk-like blade to produce a cut surface ~~is rotated~~; and

irradiating with laser light an ~~the~~ edge of the a cut surface, of the substrate, that is located in the vicinity of a second surface of the substrate, opposite from the first ~~the other~~ surface.

2. (Currently Amended) A substrate machining method according to claim 1, wherein ~~the entirety~~ all of the cut surface of the substrate is irradiated with the laser light.

3. (Currently Amended) A substrate machining method according to claim 1 ~~or 2~~, wherein the irradiating is performed ~~by laser~~ ~~is~~ a YAG laser or a CO₂ laser.

4. (Currently Amended) A substrate machining method according to claim 1, wherein a dicing tape is adhered to the second ~~other~~ surface of the substrate; and the laser light is irradiated after cutting only the substrate and expanding the dicing tape.

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5. (Currently Amended) A substrate machining method according to claim 1, wherein the laser light is irradiated onto the cut surface as the disk-like blade creates a second cut surface ~~a street that has been already formed and is different from a street being formed by cutting the substrate by the disk-like blade.~~

6. (Currently Amended) A substrate machining method according to claim 1, wherein the laser light is irradiated onto the cut surface ~~a street~~, that is being formed by cutting the substrate by the disk-like blade, while following the movement of the disk-like blade.

7. (Currently Amended) A substrate machining apparatus for machining a substrate, comprising:

a disk-like blade that is rotated to cut the substrate through a first from its one surface to produce a cut surface; and

a laser light irradiating portion for irradiating a laser light to the portion, of a the cut surface of the substrate, that is located in the vicinity of a second surface ~~the other surface~~ of the substrate, opposite from the first surface.

8. (Currently Amended) A substrate machining apparatus according to claim 7, wherein the laser light irradiating portion irradiates ~~can irradiate~~ the laser light onto ~~the entirety~~ all of the cut surface of the substrate.

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9. (Currently Amended) A substrate machining apparatus according to claim 7—~~or~~ 8, wherein the laser light irradiating portion is a YAG laser light irradiating portion or a CO₂ laser light irradiating portion.

10. (New) A substrate machining method according to claim 1, wherein said irradiating with a laser light comprises irradiating the edge of the cut surface until the edge of the cut surface melts.

11. (New) A substrate machining method according to claim 10, further comprising allowing the melted cut surface to cool and harden thus forming a stronger layer than a remainder of the substrate.

12. (New) A substrate machining method according to claim 1, wherein the cutting and irradiating is performed on a substrate comprised of a silicon wafer.

13. (New) A substrate machining apparatus according to claim 7, wherein the laser light irradiates the edge of the cut surface until the edge of the cut surface melts.

14. (New) A substrate machining apparatus according to claim 7, wherein the substrate is a silicon wafer.

15. (New) A substrate machining method for machining a substrate, comprising:

cutting the substrate through a first surface by use of a rotating disk-like blade to produce a cut surface; and

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irradiating with laser light an edge of the cut
surface of the substrate.